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Feed

Outlook and Situation Report

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Scorching weather likely to cut yields, page 3

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Summary

Hot, dry weather over much of the major corn areas in early July and limited selling of available stocks pushed prices up to the trigger level of $3.15 for reserve IV corn (mostly 1981 crop). USDA announced the release of the reserve July 15. However, continued hot, dry weather, and forecasts for more of the same, kept farm supplies tight, and prices rose to the trigger level of $3.25 a bushel for reserve V (mostly 1982 crop). The release of this reserve was announced July 26.

The release of both reserves made over a billion bushels of corn eligible for market use. However, because of concern over 1983 production prospects, farmers will likely continue to hold available stocks tightly. By late July, corn prices in central Illinois had risen to $3.40 a bushel, 25 cents above a month earlier. If yields are significantly curtailed because of the weather, corn prices will likely stay strong through harvest.

The provisions of the 1984 feed grain program will largely depend on the weather this summer and the resulting size of the corn crop. If the national average yield is reduced substantially, the harvest may be sufficiently short of use that a large-scale acreage reduction program would not be needed in 1984/85.

Barley and oat harvests are underway. A 9-percent increase in the acreage of barley to be harvested will likely produce a record crop of 560 million bushels. For oats, a smaller harvested area and a drop in yield from last year are expected to push the harvest down to 519 million bushels, from 617 million last year. The net change in the total of the two crops is a drop of about 600,000 metric tons.

Larger numbers of livestock and poultry strengthened feed demand during the first half of 1983. However, the gain from year-earlier feeding is expected to taper off in the last half of 1983 and into 1984. Consequently, domestic feed use in the 1983/84 feed year may be about the same as for 1982/83, which is now estimated at 138 million tons, including 114 million tons (4.5 billion bushels) of corn.

The rate of growth in food, seed, and industrial use (FSI) of corn slowed during April-June. The higher corn prices this spring and operating problems in some of the new dry-milled plants producing ethanol prompted the slowdown. Growing demand for high fructose corn syrup is expected to outpace increases in ethanol production during the remainder of the 1982/83 crop year. Around 900 million bushels of corn will likely go into FSI use this season, 10 percent more than in 1981/82, and another 6- to 8-percent gain may be tacked on in 1983/84.

Record yields and a near-record area harvested are expected to result in record foreign coarse grain production in 1983/84. World trade and U.S. exports will likely increase. The developing countries most likely to expand imports this year are Mexico, Algeria, Egypt, the Philippines, South Korea, and Taiwan. Of the developed countries, South Africa will import a significant amount of coarse grains for the first time in 30 years, because of this year's drought-reduced crop. U.S. exports for the 1983/84 crop year are forecast at 59.9 million metric tons, compared with the 54.2 million estimated for 1982/83.

SITUATION AND OUTLOOK FOR FEED GRAINS

Feed Grain Supply and Utilization

Feed grain disappearance totaled 38.1 million metric tons during April-May, an increase of 1.8 million from last year. Domestic use was a record 29.8 million—up 4.7 million from a year earlier. Exports amounted to 8.3 million tons, down 2.9 million from last year and the smallest April-May total since 1977.

Feed grain disappearance for the first 8 months of the feed year (October-May) amounted to 169.2 million metric tons—7 million more than for the comparable period last year and less than a million short of the record 170-million-ton disappearance for October-May 1979/80. Feed and residual use was a record 114 million tons, up 9.5 percent from a year earlier. Food, seed, and industrial use rose 1.7 million tons to 17.2 million, also a record high for October-May. The rise in domestic use was partly offset by a 4.6-million-ton drop in exports, to 38 million.

In spite of the near record disappearance for the first 8 months, June 1 feed grain stocks amounted to 150.7 million tons—up 32 percent from a year earlier and a record high for that date. This year's barley and oat harvests will add about 19.9 million tons more, bringing the June-September supply to almost 171 million tons. A significant amount of new-crop sorghum and some new-crop corn also will become available during this period.

About 102.6 million tons of June 1 feed grain stocks were in the farmer-owned reserve (FOR), under regular Commodity Credit Corporation (CCC) loans, or in the CCC inventory. However, the triggering of the corn reserves in July made a large part of this eligible for market use. Also, some of the FOR corn and grain sorghum will be returned to farmers under the special procurement programs for PIK. Some reserve corn and sorghum may be rotated into the market during August and September, and those farmers in Louisiana, Florida, and most of Texas who are in compliance with the PIK program may receive their PIK grain before October 1. Therefore, market supplies appear adequate for the expected disappearance of 52 million tons during June-September. The 1982/83 feed year probably will end with about 119 million tons of feed grains on hand October 1—about 40 percent more than a year earlier and record-high carryover stocks.

Corn

Domestic Disappearance a Record

Domestic disappearance of corn for April-May totaled 976 million bushels, 157 million more than a year earlier and the largest disappearance on record for that period. Both FSI and feed and residual use reached record highs for April-May. FSI use is increasing because growing markets for high fructose corn syrup (HFCS) and ethanol are expanding the market for corn as a raw material. The HFCS and ethanol markets are expected to continue expanding through most of the 1980's, but at a slower rate than experienced during the last several years.

The April-May feed and residual use amounted to 812 million bushels, an increase of almost 21 percent over the 672 million a year earlier. Changes in livestock and poultry numbers imply that grain-consuming units during this April-May were about 5 percent greater than during the same period of last year. Therefore, feed consumption per animal unit would have had to exceed the year-earlier use by 15 percent, given the estimates of supply and other uses.

A rise in the feeding rate does not appear consistent with market conditions this spring. A strong recovery in corn prices, coupled with livestock prices dropping from year-earlier levels, turned livestock/feed price ratios down. From March on, livestock/feed price ratios averaged below last year, and by May they were the lowest since July 1981. Moreover, a 15-percent increase in feed consumption per animal unit would mean a substantial gain in slaughter weights—which did not occur.

For January-May, feed and residual use appears to be considerably higher than would be expected on the basis of livestock and poultry numbers. This discrepancy may be the result of one or a combination of factors included in the residual component, such as waste, shrinkage, grain in transit, or reporting and estimation errors.

The major dilemma arising from this situation is the uncertainty it raises in projecting feed and residual use for June-September of 1982/83 and for 1983/84. If we assume the residual factors continue in the same magnitude during June-September, feed and residual use may be as high as 900 million bushels. However, if the residual factors are removed, feed and residual use may only be about 775 million during June-September. A similar problem exists in projecting feed use for 1983/84.

June 1 Stocks Record High But Largely Isolated from Market

Almost 5.1 billion bushels of corn were in storage on June 1—almost 31 percent more than the 3.9 billion on hand a year earlier. However, over 3.2 billion bushels of the June 1 stocks were isolated from the market in CCC inventory and the FOR, leaving slightly under 1.9 billion available to the market.

Corn stocks on June 1

Item	1982	1983
	Million bushels	
Total stocks	3,904	5,080
CCC inventory	270	492
Private	3,634	4,588
FOR	1,226	2,727
Free	2,408	1,861
Under loan	599	191
Extended loan	94	30
Other	1,715	1,640

Corn under regular loan would be available to the market since prices prevailing in June were above the redemption values. However, a significant amount of corn under regular loan on June 1 was either pledged for PIK payments or bid to the CCC in the "PIK-for-PIK" procurement program. Offsetting the quantity of regular

corn loans that may be pledged for PIK payments are about 100 million bushels of reserve corn still to be released as farmers deliver grain acquired by the CCC under the PIK-for-PIK program. Thus, over 1.8 billion bushels of June 1 stocks likely were available for market use, and triggering of the corn reserves in July made an additional billion bushels eligible for market use. Some additional corn may enter market channels in late August and September via PIK entitlements and the harvest of the new crop in early harvest areas. About 23 million bushels of PIK entitlement corn can be received prior to October 1 in Florida, Louisiana, and part of Texas.

Carryover Stocks Projected at 3.4 Billion Bushels

Total disappearance for June-September is estimated at almost 1.7 billion bushels—about 1.1 billion for domestic use and almost 600 million for export. This would leave carryover stocks of almost 3.4 billion bushels on hand October 1.

Farmers probably will deliver the balance of the PIK-for-PIK grain during July and August, so by October 1 the FOR will be reduced to about 1.5 to 1.6 billion bushels, and a little over 1.2 billion will be in CCC inventory. Free stocks are expected to be 550 to 650 million bushels, of which about 100 million may be pledged for PIK payments.

Weather Market Triggers Corn Reserves

Hot weather in early July through much of the corn area and limited selling of available stocks pushed prices to the $3.15 trigger level for reserve IV corn. The USDA announced the release of reserve IV corn on July 15. Continued hot weather, and a forecast for more of the same, maintained the tight farm supply situation and pushed prices up to the reserve V trigger of $3.25. This reserve was released July 26.

The release of the corn reserves means that farmers now can redeem uncommitted portions of the FOR and sell or use the corn. There were almost 2.6 billion bushels in the FOR on July 13. However, all but about 1 billion bushels were committed as either pledges for PIK payments or for delivery to the CCC under the PIK-for-PIK procurement program.

The release status of reserves IV and V is assured through August 31. If the price of corn is above the trigger level on September 1, the Department will terminate storage payments on the uncommitted portion of the reserve, and interest will start accruing on those loans that have been in existence over a year. However, if the price of corn is below the trigger, the release status is canceled, and farmers may no longer redeem reserve corn; storage payments will continue, and no additional interest charges will accrue against the loans, except for those loans in existence less than a year. If the reserves remain triggered on September 1, their status will be reviewed on the first of each successive month.

The corn market will continue to be a weather market this summer. As long as hot, dry weather continues over much of the major corn-growing areas, corn prices will hold strong in anticipation of lower yields and a smaller crop. The major risk to yields in late July was the prospect of poor pollination because of high temperatures over part of the Corn Belt and Northern Plains. This could be one of those years in which late-planted corn yields are better than early plantings in the areas suffering from high temperatures; the heat wave may end by the time the late corn reaches the critical pollination period.

Subsoil moisture conditions in early July were the best in many years, and moisture was not a problem. However, if extremely dry weather continues for an extended period, lack of moisture would become a negative factor for yields.

Quite often there is a tendency to overreact to weather phenomena. Without a well designed sample of the entire growing area, it is almost impossible to assess the impact of hot weather on the crop. This year, 49 percent of the corn planted for grain is in the 5 Corn Belt States, 16 percent in the 3 Lake States, 15 percent in the 4 Northern Plain States, and 19 percent is scattered over the remaining 38 States. A 10-percent reduction in yields throughout the entire Corn Belt, with normal yields in the remaining States, would reduce the national average yield by 4.7 percent.

Normally, July is the critical month for temperature in corn development in the 5 Corn Belt States. If the temperature for the entire Corn Belt averaged 5 degrees above normal for the month of July, it would reduce yields in the Corn Belt by about 9 bushels per acre—about 7 percent of the average Corn Belt yield the past 5 years (see May 1982 *Feed Outlook and Situation*). This would reduce the U.S. average yield by 3.4 percent.

The Crop Reporting Board will release its first estimate of yield and production on August 11, reflecting conditions around the first of August. However, this estimate will not give as accurate an assessment of potential yields this year as usual, because ear formation when the survey was taken was not sufficiently advanced to reflect possible pollination damage. The September crop report will give a more accurate estimate of the situation because field measurements will reflect pollination damage.

Farmers are likely to hold old-crop corn tightly until they are reasonably assured of good yields on this year's crop. A pickup in the selling of old-crop corn in late August or early September could indicate that yields have not been seriously reduced over a wide area.

Weather Outcome Critical to Corn Prices This Fall

The impact on corn yields of above-normal temperatures and below normal precipitation holds the key to farm prices this fall and for 1983/84 as well. If the hot weather breaks before widespread damage to pollination occurs, the 1983 crop plus the 1.8 billion bushels of PIK payments alone will be more than adequate to meet market needs. In this case, the price of corn will likely decline seasonally in late August and September, and the loan rate of $2.65 would set the floor under prices for 1983/84.

However, if adverse weather holds through the first half of August, and the area affected expands so that the national average yield dropped to 100 bushels per acre or less, the 1983 crop plus PIK payments would fall short of expected disappearance for 1983/84. Under these conditions, the price of corn likely would hold relatively strong during the late summer and fall.

1984 Feed Grain Program Also Hinges on Weather

The provisions of the 1984 feed grain program also depend to a large extent on weather through mid-August. If the national average yield of corn is not reduced significantly by above-average temperatures, this year's crop plus PIK entitlements will probably exceed disappearance. In this case, ending stocks on October 1, 1984, likely would exceed 2 billion bushels, and the average farm price of corn would be held only slightly above the regular loan rate. Given this outlook, there would be justification for a program to decrease ending stocks by an additional half-billion bushels or so during 1984/85.

In contrast, if the national average yield of corn were lowered substantially, triggering reserve V would pull ending stocks considerably lower by October 1, 1984. In this case, no further stock reduction might be needed in 1984/85, so the 1984 program would only need to limit production to about the expected level of use. The September crop report will probably indicate which scenario is more likely.

PIK Marketing Will Affect Seasonal Price Pattern This Year

Aside from the small amount of PIK corn eligible for distribution during July-September, most PIK entitlements are dated October 1, October 15, or November 1. The entitlement date is the first day that a farmer may receive his payment. Generally speaking, the southern tier of States, plus Tennessee, North Carolina, Arkansas, Oklahoma, the High Plains of Texas, and about four-fifths of California, have an October 1 date. Payments for these States come to about 93 million bushels, or about 5 percent of the total.

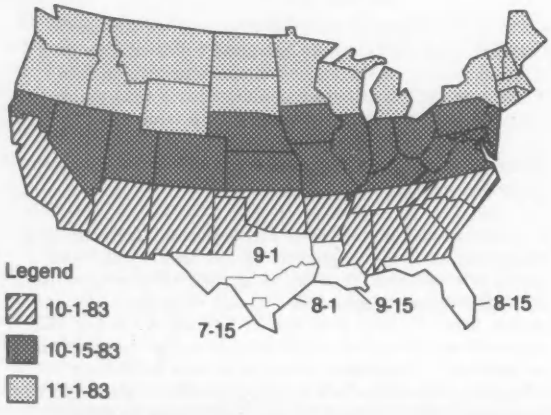
Seventeen Central States, plus the northern fifth of California, may receive payments beginning October 15. PIK payments in these States total almost 1.3 billion bushels, about 71 percent of the total.

The remaining payments of about 426 million bushels—24 percent of the total—go to farmers in 17 States across the northern part of the United States beginning November 1.

Farmers have 5 months in which to call for their PIK payments. Therefore, except for the small number of payments that may be requested during July-September, payments will be deliverable during October 1983 through March 1984.

If most farmers delay receipt until near the end of the entitlement period, we could have heavy marketings during late winter and early spring and, thus, downward pressure on prices. Also, because of the reduced acreage this year, marketings of new-crop corn during October-December likely will be reduced and prices may not show much weakness during harvest. Thus, the normal pattern of lower harvesttime prices followed by a rise may be reversed this marketing year.

Corn-Grain Sorghum Entitlement Dates for 1983 PIK Payments



Sorghum

Free Stocks Extremely Tight

Disappearance of sorghum for April-May amounted to 91 million bushels. Feed and residual use, at 75 million bushels, was up 16 million from a year earlier, while exports of 14 million bushels fell almost 8 million from April-May 1982.

The April-May use brought disappearance for October 1982-May 1983 to 608 million bushels, the same as a year earlier. However, feed and residual use was up about 31 million bushels, while exports were down about 30 million, and FSI was off about a million.

June 1 stocks of sorghum, on and off farms, totaled 530 million bushels, almost 150 million more than on hand last June and the largest stocks for that date since 1966.

Despite larger total stocks, stocks available to the market at current prices are extremely short. Ninety-six percent (509 million bushels) of June 1 stocks were iso-

Sorghum stocks on June 1

Item	1982	1983
	Million bushels	
Total stocks	380	530
CCC inventory	38	54
Private	342	476
FOR	224	455
Free	118	21
Under loan	40	10
Other	78	11

lated from the market—54 million bushels in CCC inventory and 455 million in the FOR. Last June, only 69 percent (262 million bushels) was tied up in the FOR and CCC inventory. This year, only 21 million bushels were free stocks, and 10 million of these were under regular loan and may have been pledged for PIK payment or sold to the CCC under the PIK-for-PIK acquisition program.

Sorghum Reserve IV Released

The price adjustment factor for sorghum was 59 cents per cwt in July. On August 1, this factor was revised downward to 44 cents resulting in the daily adjusted price rising to $5.35 per cwt and 5-day average to $5.27.

Higher corn prices and the forecast of continued hot, dry weather in the major sorghum-producing areas pushed sorghum prices up sufficiently the first 2 days of August for the 5-day average price to reach the trigger level of $3.26 per cwt. The release of reserve IV was announced August 3. However, this probably will not have much impact on the market. A large share of the 205 million bushels of sorghum in reserve IV is either pledged for PIK payments or bid to the CCC in the PIK-for-PIK procurement. Moreover, farmers likely will hold stocks tightly as long as hot, dry weather is a threat to this year's crop. The 5-day average price will have to rise to $5.54 per cwt in order to trigger reserve V.

PIK Payment and New-Crop Grain Ease Supply Situation in July

The tight supply situation is being eased by new-crop harvest, PIK payments, and triggering of the reserve. Harvest in the Rio Grande Valley and Coastal Bend section of Texas was underway by mid-July, and about two-thirds of the Texas sorghum acreage is located in these areas. The PIK entitlement date for the Rio Grande region is July 15, and for the Coastal Bend, August 1. The combination of PIK payments and new-crop harvest may provide over 150 million bushels of sorghum for the market from mid-July through August. An additional 23 million bushels will be shifted from loans to free stocks—the payment to farmers whose bids were accepted by the CCC in the PIK-for-PIK program. The CCC accepted bids for about 171 million bushels of sorghum, with 148 million to be delivered to CCC and the remaining 23 million to be retained by farmers.

Slightly Smaller Supply In Prospect for 1983/84

Disappearance during June-September is expected to be about 68 million bushels, leaving ending stocks of 462 million on October 1—165 million bushels more than a year earlier.

Because of the high rate of participation in the feed grain program this year, sorghum acreage planted for harvest is down about 28 percent from last year. The reduction is expected to be in lower yielding land, so production may not decline proportionally. This year's harvest is estimated at 650 million bushels—191 million smaller than in 1982. The net result is a total supply of slightly more than 1.1 billion bushels for the 1983/84 marketing year—26 million less than in 1982/83.

Stocks Expected To Decline Next Year

Sorghum disappearance during 1983/84 is expected to total about 746 million bushels, about 70 million more than the preliminary estimate for 1982/83. Feed and residual use is expected to be up 10 million bushels, and exports may be about 60 million above this season's estimated 190 million. Preliminary estimates of 1982/83 exports show them the lowest since 1971/72, when 123 million bushels were shipped.

The expected disappearance in 1983/84 exceeds the projected sorghum harvest for 1983 by 96 million bushels. Ending stocks on October 1, 1984, will be about 366 million bushels if current forecasts for supply and use are realized.

Sorghum Prices Largely Determined by the Corn Market

In addition to the harvest this year, about 225 million bushels of sorghum will go to farmers as PIK payments. Consequently, if the harvest turns out near 650 million bushels, a supply of over 875 million will be available to the market by the close of harvest, about 140 million more than expected disappearance. If corn yields are not seriously reduced by hot, dry weather, the combination of the corn harvest plus PIK payments will also exceed expected use. The price of corn will likely decline until a sufficient amount of new-crop corn goes under loan to hold the price near the loan rate. In this case, sorghum prices also will be driven down to the loan rate until a sufficient amount of new-crop sorghum is placed under loan.

However, if corn yields are significantly reduced and the harvest plus PIK payments are less than market disappearance, corn prices will average well above the loan level. Rising corn prices would pull up sorghum prices, because some substitution of sorghum for corn likely would occur in livestock and poultry feeding. Under these conditions, the sorghum price would also rise well above the loan rate, and the available supply would likely find market use without a substantial portion of new-crop sorghum going under loan. Therefore, sorghum use would wind up higher than the 746 million bushels now projected for 1983/84.

Barley

Record Harvest in Prospect

This year's 9-percent increase in harvested area will more than offset a small decline in yield per acre, so a record barley crop of 560 million bushels is forecast, 7 percent above the previous record set in 1982. The major production increases are in Montana, North Dakota, Oregon, and Washington. Significant decreases are evident in California and Idaho.

With carryover stocks at 223 million bushels—almost 50 percent larger than a year earlier—the record harvest and an allowance for imports would give a record total supply of 793 million bushels, about 16 percent larger than in 1982/83. However, much of the increase is in the

Barley stocks on June 1

Item	1982	1983
	Million bushels	
Total stocks	150	223
CCC inventory	3	6
Private	147	217
FOR	22	98
Free	125	119
Under loan	26	21
Other	99	98

FOR and is therefore isolated from the market unless barley prices rise substantially.

Disappearance Down in 1982/83

Total disappearance of barley for 1982/83 (June-May) was 460 million bushels, 3 percent smaller than the 476 million used the preceding year. The decline resulted from exports dropping to 47 million bushels—less than half the previous year's 100 million.

Domestic use in 1982/83 exceeded a year earlier by 37 million bushels. Feed and residual disappearance totaled 242 million, an increase of 40 million from 1981/82, but use by the alcohol beverage industry was down 5 million bushels.

Disappearance Expected To Rise in 1983/84

Use during 1983/84 is expected to total 510 million bushels, an increase of 11 percent from 1982/83's 460 million. Domestic use is expected to be up about 36 million bushels, and exports will likely rise about 13 million. This disappearance would still be 60 million bushels less than the 570 million added to supplies by harvest and imports. Consequently, ending stocks on June 1, 1984, are likely to total about 283 million bushels—60 million larger than ending stocks this past June.

Reserve Barley Entry Delayed

Last year, farmers in compliance with the feed grain program could enter barley directly into the FOR at a loan rate of $2.37 a bushel. Feed barley prices were below the FOR loan rate during the winter and spring, sending a significant amount into the reserve. Through the end of May, 69 million bushels of the 1982 crop had been put under reserve loans.

This year, farmers must wait until their 9-month regular loans mature before being able to place grain into the reserve. The regular loan rate is $2.16 a bushel—below the reserve loan rate for last year, but above the regular loan rate of $2.08 last year. About 50 percent of the barley base acreage is in compliance with the feed grain program this year. Consequently, enough of the crop will be eligible for CCC loans to make the loan rate an effective floor to prices. Whether prices are pushed down to the support level will depend to a great extent on the size of this year's corn crop. If corn yields decline greatly, the strength in the corn market likely will hold feed barley prices well above the support level.

Oats

Total Use Up Slightly in 1983/84

Total disappearance of oats increased 1.5 percent in 1982/83, from 536 million bushels to 544 million. Domestic use was up 12 million bushels—3 million in feed and residual disappearance and 8 million in seed use. The gain in seed use resulted from conservation seeding of over 9 million acres under the 1983 wheat and feed grain programs. Area seeded to oats for harvest was down 1.6 million acres from 1982. Exports for 1982/83 amounted to 3 million bushels, almost 4 million below a year earlier and one of the smallest export totals on record.

Almost 4 million bushels of oats were imported during 1982/83 (June-May), mostly during January-May. The high value of the U.S. dollar relative to the Canadian dollar made the United States an attractive market for Canadian oats. This is the first year since 1954/55 that we have imported more oats than we exported.

The 1982/83 use of 544 million bushels fell short of production and imports by 77 million, so ending stocks rose by a like amount, to 229 million. Even though this total is 51 percent higher than the record-low stocks of a year earlier, it is below the 10-year average of 252 million bushels.

Smaller Oat Harvest in Prospect

This year's oat crop is estimated at 519 million bushels, 16 percent smaller than last year's 617 million, because of a 1.6-million-acre decline in area harvested and a lower average yield.

The increase in 1982/83 carryover stocks offset much of the decline in this year's harvest. Supply for 1983/84 will be about 753 million bushels, about 20 million smaller than for 1982/83. The supply has been 753 million bushels or less only 3 years since 1950.

Use during 1983/84 is expected to be about 550 million bushels, almost the same as during 1982/83. At this level, use would exceed production and imports by 26 million bushels, pulling ending stocks down to 203 million bushels by June 1, 1984.

The price of oats has consistently held above the loan rate for the past 2 years, so only a negligible amount is under loan, in the reserve, or in the CCC inventory. The loan rate for the 1983 crop is $1.36 a bushel—5 cents above 1982. However, the farm price is expected to average a little over $1.40 a bushel, unless corn yields are reduced, in which case the price of oats would average substantially higher. Therefore, large quantities of oats are not likely to go under loan this year.

FEED DEMAND

Feed demand during January-June was strong. Virtually all categories of feeding, with the exception of egg production, expanded substantially. In many instances, particularly for January-March, feeding rates were up in addition to the quantity of livestock being fed. The first-half expansion was in part a response to low feed grain prices and favorable feeding margins during the last half of 1982.

The number of milk cows was up slightly from a year earlier, but total milk production rose 2 percent, indicating increased feeding per cow. The number of cattle on feed in the 13 quarterly reporting States was up 14 percent on January 1 and 4 percent on April 1. The number of hogs kept for market in the 10 quarterly States was down 8 percent from a year earlier on December 1, 1982, but up 3 percent on March 1. Broiler production was up 6 percent from a year earlier in the first-quarter of 1983, and it rose 4 percent in the second quarter. Turkey production was up 13 percent in the first quarter and about 10 percent during April-June. On the negative side, egg production during the first half was 2 percent below a year earlier. Weighting these changes by their respective importance in the grain-consuming animal index for 1982 gives an estimate of 5 percent for the total increase in feed demand represented by livestock and poultry numbers.

These increases listed above are not indicative of feed demand for the last half of 1983 or the first half of 1984. The number of milk cows on farms July 1 was up 1 percent from last July and the number of replacement heifers was up 2 percent. However, changes in the dairy price support program may result in some liquidation of the dairy herd this fall. If legislation under consideration is passed, the liquidation probably will be even greater. Therefore, feed use by the dairy industry likely will taper off in second-half 1983 and may be down in 1984.

The number of cattle on feed July 1 in the 13 States was up 1 percent from last June. Feed use by the cattle feeding industry likely will average a little closer to a year earlier during the last half of this year, but then may gain during January-March 1984. On a feed-year basis (October-September), the gain in cattle feeding from 1982/83 to 1983/84 may not be quite as great as the gain a year earlier.

The 1983 spring pig crop (December-May) was 14 percent larger than the 1982 crop, and producers reported intentions to increase farrowings by 9 percent during June-November. These increases indicate that feed use by the hog industry will continue to rise at least through mid-1984, unless high corn and low hog prices result in herd liquidation.

Egg production is expected to continue to decline during the last half of 1983, and laying flocks are not likely to be increased in 1984—at least not soon enough to result in greater feed use.

Broiler production during the last half of 1983 is expected to be at or only slightly above year-earlier levels. Cumulative placements of pullets in the broiler chick hatchery supply flock have been steadily dropping from a year earlier. Consequently, the broiler industry may expand very little in 1984—at least for the first half.

In addition to the reduced growth, or in some instances decreases of livestock and poultry numbers during 1983/84, feed grain prices likely will be higher and livestock and poultry product prices lower through the winter quarter. These changes will reduce livestock/feed price ratios and may prompt a reduction in the rate of feeding. Thus, domestic feed demand for 1983/84 is expected to be about the same as in 1982/83. If the 1982/83 feed and residual disappearance figure was biased upward by residual factors, and these factors do not repeat in 1983/84, the supply/use balance sheet may wind up showing a smaller feed and residual number for 1983/84.

FOOD AND INDUSTRIAL DEMAND

FSI Demand Increasing at Slower Rate

Food, seed, and industrial use of corn continued to rise during April-June, but at a slower rate than during the first half of the marketing year. Low corn prices and growing demand for fuel ethanol favored large increases in ethanol production during those first 6 months. Ethanol production is still running ahead of a year ago, but higher corn prices and operating problems in some of the new dry-milled plants suggest a slowing in the rate of increase.

High fructose corn syrup (HFCS) output is on the rise because of increased demand for soft drinks in the summer months and because of decisions by the PepsiCo, Incorporated, and the Coca-Cola Company to increase use in their products. The Pepsi and Coke decisions should increase HFCS consumption through the summer of 1984, after which increases in use are expected to level off. During the remainder of the marketing year, growth in demand for HFCS is expected to outpace increases in ethanol production.

Food, seed, and industrial use of corn[1]

Products	1980/81*	1981/82*	1982/83**	1983/84**
	Million bushels			
HFCS	165	195	230	270
Alcohol[2]	75	120	175	200
Glucose and dextrose	185	190	190	190
Dry milled for food & beer[3]	160	162	163	166
Starch	130	125	125	125
Seed	20	19	17	19
Total	735	811	900	970

[1]Year beginning October 1. [2]Fuel, industrial, and beverage alcohol. [3]Cornmeal, grits, flour, cereal, snacks, and specialty foods.

*Revised. **Forecast

WORLD COARSE GRAIN SITUATION

Record foreign production and use and a slightly improved trade volume are forecast for 1983/84. Despite a sharp reduction in U.S. stocks, world stocks will be more than ample to meet demand. Major factors affecting the global coarse grain situation include higher world prices, an expected larger Soviet harvest, poor outturns in Mexico and South Africa, and stagnant demand for livestock products.

After 4 Years of Poor Crops, Soviets Increase Production

Record yields and near-record area are forecast for 1983/84 foreign output. The largest increase in produc-

tion is anticipated for the USSR, with a crop of over 100 million tons, compared with an average of 80 million the previous 4 years. Output is expected to be down in both Western and Eastern Europe. Taken together, production of the major foreign coarse grain exporters—Canada, Australia, Argentina, Thailand, and South Africa—will likely be up 10 percent from last year. Only Canada will show a decline. Canadian sowings were reduced because initial prices set by the Government were lowered by about 15 percent, reflecting an accumulation of stocks from slow export movement. The Australian and South African crops will likely be up from this year's drought-reduced outturns.

Foreign Use Up, but Below Trend

Total foreign coarse grain use in 1983/84 is projected to hit an alltime high, surpassing the record set in 1980/81. Nonfeed use of grains has remained fairly constant the past 5 years, averaging 45 percent of total use. The global recession continues to keep world demand for livestock products from expanding, limiting feed use of coarse grains to below trend for the third consecutive year. From 1960 to 1980, feed use grew about 4 percent per year, but since then the rate has been about half that.

Only in the USSR will feed use increase appreciably. Because of record livestock numbers, the demand for grain and nongrain feeds in the USSR is the highest since 1978. In the developing countries, feed use has been stagnant since 1981. During the 1970's, livestock industries progressed in the higher income developing countries—especially Mexico, Brazil, and South Korea—and feed use accelerated. But in recent years, a combination of smaller crops, droughts requiring distress slaughtering, and financial constraints, particularly in Eastern Europe and Mexico, has kept feed use from increasing.

In the foreign developed countries, feed use of coarse grains grew throughout the 1970's. Since 1980, however, feed use has fallen slightly. Australian feed use has slackened the past 2 years because of drought-induced slaughtering. Since 1980, feed use of grains in the European Community (EC) has declined each year, despite increased livestock production. The pricing policies within the EC have favored expanded use of nongrain feed ingredients at the expense of feed grains. This year, to reduce its wheat surplus, the EC may begin a subsidized wheat feeding program, known as the incorporation scheme, and this would likely reduce coarse grain use even more. In non-EC Western Europe, feed use of coarse grains has not increased since 1979. However, Japanese feed use could increase in 1983/84, following 2 years of decline.

World Trade Shows Some Recovery

The volume of world trade in 1983/84 is forecast to increase by 5 million tons to 94 million (July/June, excluding intra-EC trade).

Imports by the centrally planned countries have fallen drastically, from a peak of 34 million tons in 1981/82 to almost half that for 1982/83. Most of the decline is attributable to the USSR, which will likely reduce its imports to 11 million tons in 1983/84, the smallest since 1978. East European imports will be halved from 1980 because of large crops and limited ability to pay. Imports by China are expected to be 3 million tons—small in comparison with the USSR, but up for the second consecutive year.

Imports by the developing countries increased about 25 percent each year from 1976 to 1980. After falling in 1981, they could reach a record in 1983/84. The Africa-Middle East region has been the fastest growing developing region for imports. Imports by Mexico, Algeria, Egypt, and the Phillipines are likely to keep up the rapid growth. In Asia, South Korea and Taiwan are the biggest growth markets, and both countries are expected to import record amounts of feed grains this year. Two years of reduced output will cause Mexico to repeat last year's large imports.

Imports by the developed countries will likely increase in 1983/84, despite long-term downward movement caused by decreasing EC imports. The trend reversal is expected because South African imports will likely be of unprecedented size. After exporting 3 million tons last year and 5 million the year before, South Africa will import about 2.5 million in 1983/84 to supplement the poor 1983 harvest. Japan imports more coarse grains than any other developed country, and shipments will continue high this year. If Soviet imports are reduced this year as expected, Japan may retain its 1982/83 position as the largest coarse grain importer.

Except South Africa, Major Exporters Will Increase Volume

With an increase in world trade, and with South African exports virtually nil for 1983/84, the other major exporters will be able to increase their shipments from last year. Much of the expected gain is slated for the United States, as U.S. exports will increase about 5.6 million tons to 58.1 million (July-June). Australian exports will increase because of a recovery from last year's drought, and successive large harvests in Argentina have also increased exportable supplies.

During the past 10 years, the U.S. share of world trade has been around 60 percent, except in 1979/80 and 1980/81. In those years, record imports and smaller supplies by our competitors boosted the U.S. share. In the past 2 years, despite reduced world imports, the United States has been able to maintain its 60-percent share, even though the volume of U.S. exports has fallen significantly from the peak years at end of the 1970's.

New U.S.-USSR Grain Agreement

Prospects for U.S. grain sales to the Soviet Union increased from 1982/83's 6.2 million tons with the announcement of an agreement in principle on a new long-term U.S.-USSR grain agreement (LTA). The proposed 5-year agreement, to be signed in August, requires annual Soviet purchases of 8 million tons of grain (to be split into approximately equal shares of wheat and corn). In addition, the Soviets agreed to buy either another million tons of grain or 500,000 tons of soybeans and/or soybean meal. The Soviets may purchase an additional 3 million tons of either wheat or corn (or some combination) without government-to-government consultation.

Relationships Among Ending Stocks, Prices, and Loan Rates for Corn

by

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ABSTRACT: Use of the loan program relieves downward pressure on price resulting from large supplies of corn. As supply builds beyond market needs, producers tend to move corn out of market channels into regular and farmer-owned reserve loans, holding the average farm price close to the loan rate. Conversely, as total stocks decline toward market needs, upward price pressure builds, sending farm prices above the loan rate, slowing or ending loan placements, and starting loan redemptions.

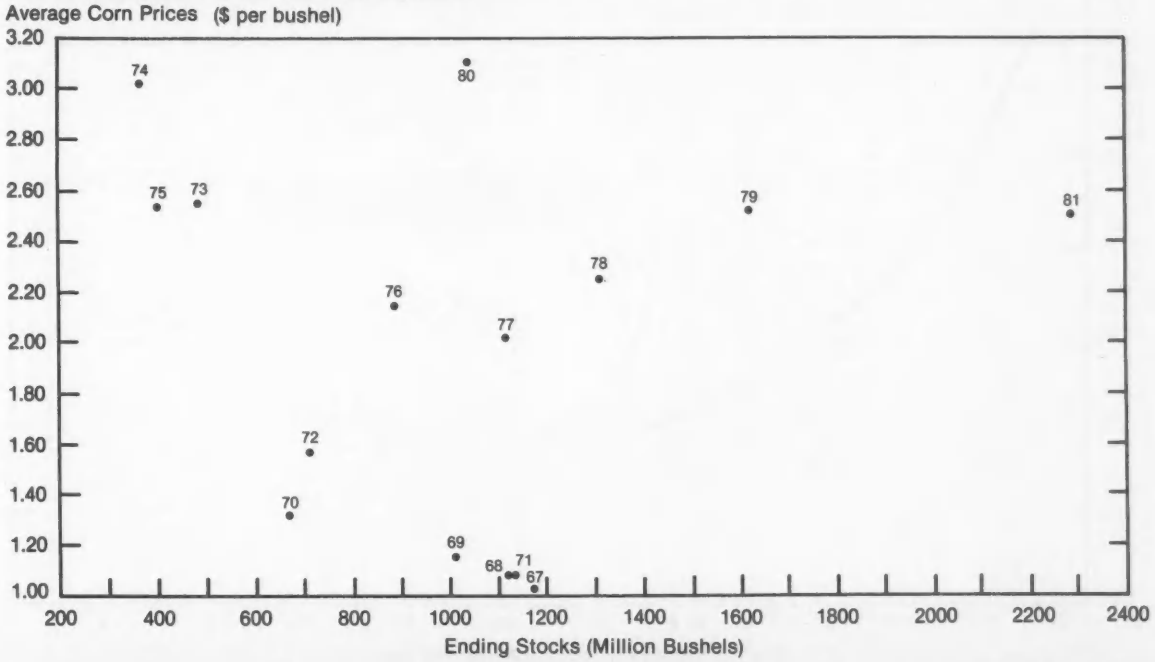
KEY WORDS: Ending total stocks, free stocks, average farm price, loan rates.

Ending Stocks and Farm Prices

For an annual crop like corn, ending stocks reflect the relationship between total supply and total use during the marketing year. If supply (production plus carryin stocks) is almost the same as total use, ending stocks will be small, and the season-average farm price tends to be high. Conversely, if supply is large relative to use, ending stocks will be large, and the season-average farm price tends to be low.

Figure A

Corn Prices (Not Deflated) and Ending Stocks



However, for the period 1967-1981, an analysis of ending stocks and average farm prices shows no significant statistical correlation, even though ending stocks fluctuated from 361 million bushels to 2.3 billion, and prices from $1.03 to $3.11 per bushel (figure A). Two factors explain the lack of a significant correlation. First, use has increased during the 15 years, so what might have been a large ending stock in the late 1960's is now a normal or low level. This problem is overcome by measuring ending stocks as a percent of annual use. Second, the value of the dollar declined 60 percent from 1967 to 1981, which distorts corn price comparisons. This distortion can be removed by deflating farm prices and loan rates by the implicit GNP deflator (on a crop year basis).

When ending stocks as a percent of use are plotted against the deflated average price received by farmers, an obvious relationship emerges (figure B). In years when ending stocks exceeded 22 percent of use—as illustrated by the 1967, 1968, and 1981 crop years—the deflated average farm price was close to the deflated loan rate. As ending stocks became smaller relative to use, corn prices rose progressively above the loan rate. For example, in the 1973, 1974, and 1975 marketing years, ending stocks were 8 percent or less of use, and the deflated farm price of corn was more than double the deflated loan rate. For the 12 years in which ending stocks were below 22 percent of use, a curvilinear relationship existed between deflated annual average prices and stocks. The average relationship is:

$$\log Y = .77265 - .50616 \log X$$

$$r = .90067$$

$$t = 6.55$$

where: Y is deflated price ($/bu)

X is ending stocks as percent of use.

The following relationship may be used to illustrate the role of the loan rate. Stocks are defined as the residual of total supply less use (Supply - Use = Stocks). If the identity is divided by use, term by term, it becomes:

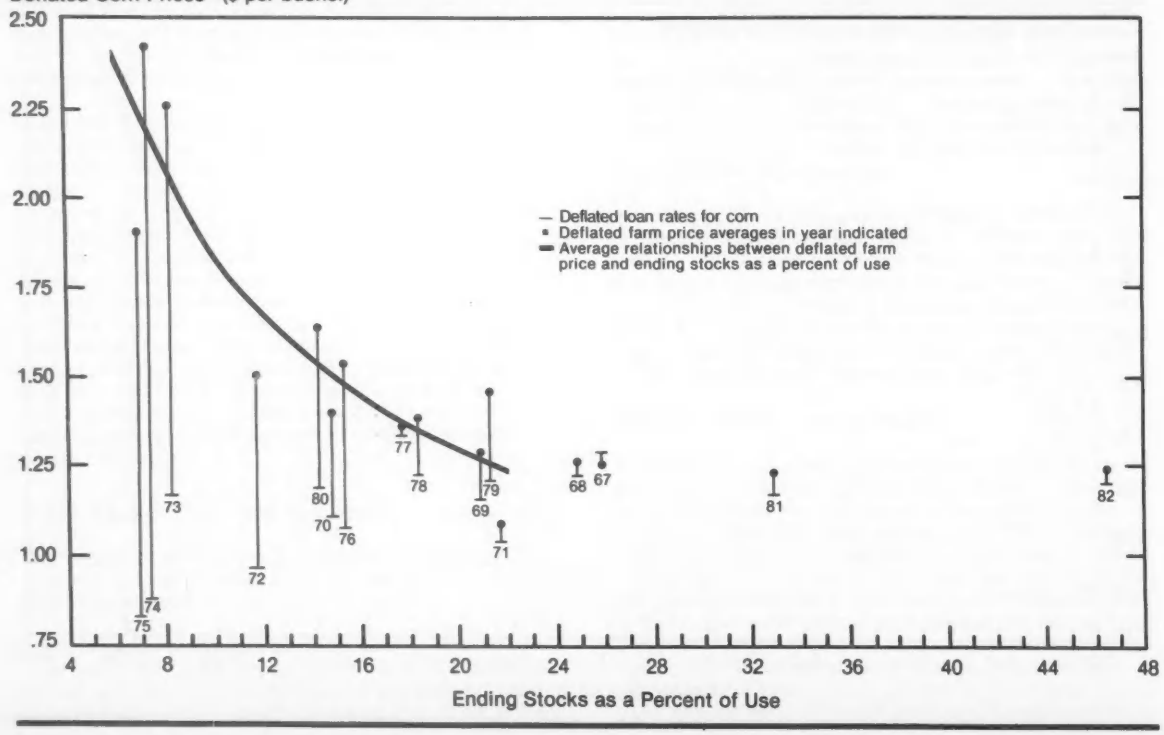
$$\frac{\text{Supply}}{\text{Use}} - 1 = \frac{\text{Stocks}}{\text{Use}}$$

The identity expressed in this form highlights the direct relationship between the size of supply relative to use and stocks measured as a percent of use.

If ending stocks are 24 or 25 percent of use, there is definite downward pressure on the price of corn. However, when the price of corn approaches the loan rate, farmers place increasing amounts under loan, which isolates a part of the supply from the market and keeps price from going lower. But prices could go lower if, as a

Figure B

Ending Stocks, Corn Prices, and Loan Rates



result of low participation, the amount of corn eligible for loans is small in relation to total production. The larger the supply relative to use, the greater must be the quantity placed under loan if price is to stay near the loan rate. Conversely, if stocks are below 20 percent of use, the price of corn is not pressured down, and the farm price is likely to average above the loan rate. The spread between the loan rate and farm price increases as the differential between total supply and use decreases.

Free Stocks and Farm Prices

Free stocks—those available to the market at current prices—have been considered an important factor affecting corn prices. Some level of pipeline stocks is necessary to facilitate efficient marketing and distribution of grain. It is believed that as free stocks dwindle to approach this pipeline level, upward pressure on price will build.

However, plotting of free stocks as a percent of use against deflated annual price shows no significant statistical correlation (figure C). One important fact does emerge from the data, though: free carryover stocks seem to fall between 6 and 9 percent of use regardless of the annual average price or the magnitude of total stocks. During the 15 years studied, free stocks were larger than 9 percent of use in only 2 years and below 6 percent in just 1 year. From 1967 through 1976, CCC loans and CCC inventory allowed free stocks to remain at a relatively low percentage of use. Since the 1976 crop year, the FOR has been the major relief valve for downward pressure on corn prices. In years in which the supply is large relative to use and large quantities of corn are placed under loan, total stocks increase while free stocks tend to remain at 6 to 9 percent of total use. Even when total carryover stocks decline below 22-23 percent of use and the average annual farm price rises above the loan rate, free stocks as a percent of use still tend to fall between 6 and 9 percent.

The relationship of free stocks to the annual average corn price, loan rate, and carryover stocks becomes clearer when free stocks are expressed as a percent of total stocks rather than as a percent of use (figure D). When free stocks are less than 40 percent of total carryover stocks, the deflated annual average farm price has historically been close to the deflated loan rate. When free stocks comprise a larger proportion of total carryover stocks, the price of corn tends to rise relative to the loan rate. Thus, even if free stocks are low, there will be little effect on the annual average farm price if there is a large holding of grain in the FOR that can enter market channels at higher prices. Free stocks are associated with strong upward pressure on the annual average price only when they comprise almost the entire carryover stock.

Figure C

Free Ending Stocks and Deflated Corn Prices

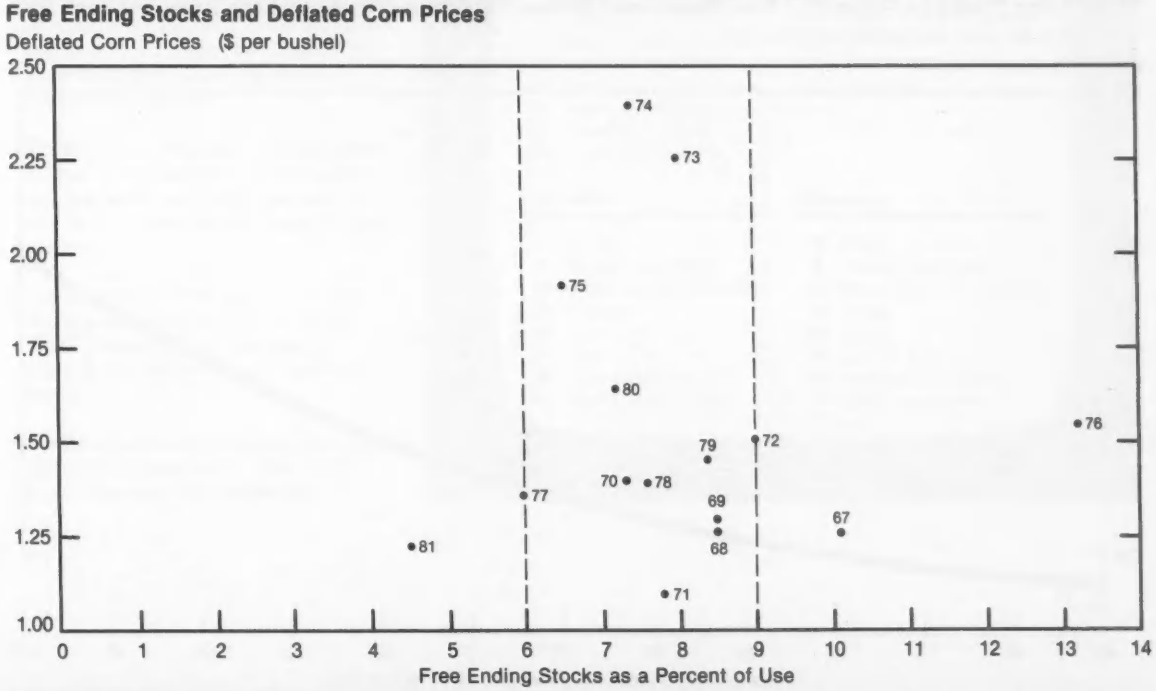


Figure D

Deflated Corn Prices and Free Stocks as a Percent of Ending Stocks

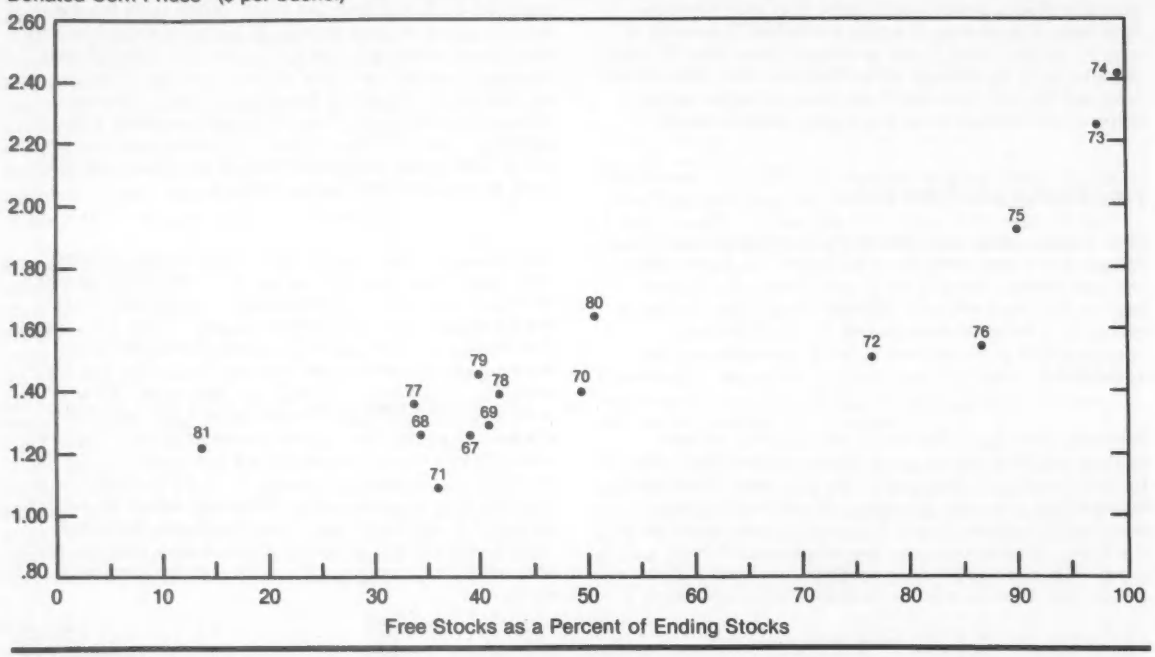
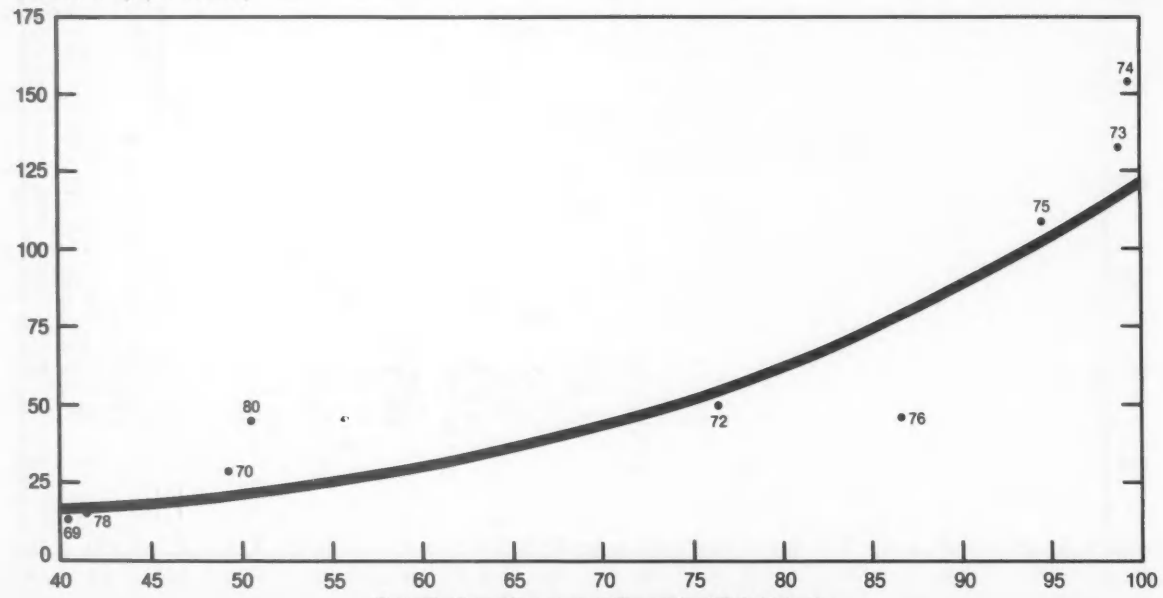


Figure E

Free Ending Stocks as Percent of Total Stocks and Differential Between Deflated Corn Price and Loan Rate



The role of free stocks emerges more clearly in the relationship associating the differential between farm price and loan rate (both deflated) and free stocks as a percent of total stocks (figure E). Only years when free stocks were 40 percent or more of total stocks are included in the measure of this relationship. When free stocks are less than 40 percent of total stocks, the farm price-loan rate differential averages about 3 cents a bushel.

When yearend free stocks comprise more than 40 percent of total stocks, the average relationship between free stocks and the annual farm price-loan rate differential is:

$$\log Y = .60468 + .01486\ X$$

$$r = .915$$

$$t = 6.42$$

where: Y = differential between deflated farm price and deflated loan rate,

X = free ending stocks as percent of total ending stocks.

The differential estimated from this equation is deflated but can be converted to a current dollar basis by multiplying by the GNP implicit deflator.

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Table 1.--Feed grains: marketing year supply, disappearance, area, and prices, 1978-83 1/

Year 2/	Supply				Disappearance							Ending stocks	
					Domestic use								
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 3/	Total
	Million metric tons													
1978/79	41.4	221.5	0.3	263.2	14.4	5.1	1.4	135.9	156.8	60.2	217.0	3.7	42.5	46.2
1979/80	46.2	238.2	0.3	284.7	15.7	5.2	1.4	138.7	161.0	71.3	232.3	7.7	44.7	52.4
1980/81	52.4	198.0	0.3	250.7	17.1	5.4	1.3	123.0	146.8	69.3	216.1	7.1	27.5	34.6
1981/82	34.6	248.5	0.3	283.4	18.9	5.5	1.4	127.9	153.7	58.6	212.3	8.9	62.2	71.1
1982/83 4/	71.1	255.0	0.3	326.4	20.3	6.3	1.4	138.3	166.3	54.2	220.5	35.7	70.2	105.9
1983/84*	105.9	193.7 (± 17)	0.3	299.9 (± 17)	---	30.0 (± 1)	---	139.2 (± 11)	169.2 (± 11)	59.9 (± 7)	229.1 (± 15)			70.8 (± 15)

	Area				Yield per harvested hectare	Index	Government support program
	National program	Set-aside and diverted	Planted	Harvested for grain		Average price received by farmers 5/	Total payments to participants
	Million hectares				Metric tons	1977=100	Million dollars
1978/79	39.4	3.4	50.3	42.7	5.19	113	6/ 1,023
1979/80	44.3	1.9	48.1	41.5	5.74	125	6/ 247
1980/81	42.7	---	49.1	41.1	4.82	154	7/ 412
1981/82	42.5	---	50.0	43.3	5.74	123	8/ 423
1982/83 4/	---	1.3	49.3	43.3	5.89		8/ 416
1983/84							6/ 1,410

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year for corn and sorghum begins October 1; for oats and barley June 1. 3/ Includes total Government loans (original and reseal). 4/ Estimated. 5/ Excludes support payments. 6/ Deficiency, disaster, and diversion payments. 7/ Disaster payments. 8/ Deficiency and disaster payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 2.--Corn: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning October 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Disappearance: Domestic use: Alc. beverages 1/	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks Sept. 30: Govt. owned	Ending stocks Sept. 30: Privately owned 2/	Ending stocks Sept. 30: Total
	Million bushels													
1978/79	1,111.4	7,267.9	1.2	8,380.5	531.2	70.0	19.5	4,322.8	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81	1,617.5	6,644.8	1.2	8,263.5	641.8	73.3	20.2	4,139.0	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,172.5	4,984.0	1,966.9	6,950.9	302.4	1,983.5	2,285.9
1982/83 3/	2,285.9	8,397.3	1.0	10,684.2	764.6	120.9	14.7	4,500.0	5,400.2	1,900.0	7,300.2	1,225.0	2,159.0	3,384.0
1983/84*	3,384.0	6,200.0 (± 575)	1.0	9,585.0 (± 575)	- - -	970.0 (± 25)	- - -	4,500.0 (± 350)	5,470.0 (± 365)	2,050.0 (± 250)	7,520.0 (± 550)			2,065.0 (± 550)

Year beginning October 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	Average prices: St. Louis No. 2 Yellow	Average prices: Omaha No. 2. Yellow	Average prices: Gulf Ports No. 2 Yellow	Government support program: National average loan rate	Government support program: Target price	Government support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	76.2	6.1	81.7	71.9	101.0	2.25	2.51	2.28	2.81	2.00	2.10	6/ 683
1979/80	85.7	2.9	81.4	72.4	109.7	2.52	2.73	2.49	3.02	2.10	2.20	7/ 126
1980/81	84.1	---	84.0	73.0	91.0	3.11	3.35	3.13	3.54	2.25	2.35	8/ 280
1981/82	80.5	---	84.2	74.7	109.8	2.50	2.61	2.46	2.83	2.40	2.40	8/ 92
1982/83 3/	---	2.1	81.9	73.2	114.8	2.65	5/ 2.81	5/ 2.67	5/ 2.97	2.55	2.70	9/ 290
1983/84						2.65-2.90				2.65	2.86	10/ 1,128

1/ Malt beverage and distilled liquor products converted to a corn basis. 2/ Includes quantity under loan and farmer-owned reserve. 3/ Estimated. 4/ Excludes support payments. 5/ October 1982 through June 1983 average. 6/ Deficiency, disaster, and diversion payments. 7/ Disaster and diversion payments. 8/ Disaster payments. 9/ Deficiency and disaster payments. 10/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 3.--Sorghum: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning October 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Ending stocks Sept. 30: Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	190.5	731.3	---	921.8	6.0	4.1	1.8	543.8	555.7	206.6	762.3	43.6	115.9	159.5
1979/80	159.5	808.9	---	968.4	6.0	4.6	2.0	484.4	497.0	324.9	821.9	43.9	102.6	146.5
1980/81	146.5	579.2	---	725.7	5.0	4.3	2.0	301.2	312.5	304.6	617.1	38.2	70.4	108.6
1981/82	108.6	879.2	---	987.8	4.3	4.8	2.0	431.0	442.1	249.1	691.2	42.9	253.7	296.6
1982/83 2/	296.6	841.1	---	1,137.7	4.0	3.8	1.5	476.5	485.8	190.0	675.8	175.0	286.9	461.9
1983/84*	461.9	650.0 (± 65)	---	1,111.9 (± 65)	---	11.0	---	484.9 (± 55)	495.9 (± 55)	250.0 (± 40)	745.9 (± 80)			366.0 (± 80)

Year beginning October 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Kansas City: No. 2 Yellow	Texas: No. 2. Yellow	Gulf ports: No. 2 Yellow	Government support program: National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per cwt.						Mil. dol.
1978/79	13.7	1.4	16.2	13.4	54.5	3.59	4.00	4.40	4.65	3.39	4.07	5/ 243
1979/80	15.9	1.2	15.3	12.9	62.7	4.18	4.65	4.97	5.54	3.57	4.18	5/ 99
1980/81	12.8	---	15.6	12.5	46.3	5.25	5.36	5.86	6.16	3.82	4.46	6/ 101
1981/82	14.3	---	16.0	13.7	64.1	4.27	4.29	4.85	4.97	4.07	4.55	7/ 268
1982/83 2/	---	0.7	16.1	14.2	59.0	4.52	4/ 4.78	4/ 5.13	4/ 5.40	4.32	4.64	7/ 66
1983/84						4.46-4.82				4.50	4.86	8/ 191

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Excludes support payments. 4/ October 1982 through June 1983 average. 5/ Deficiency, disaster, and diversion payments. 6/ Disaster payments. 7/ Deficiency and disaster payments. 8/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 4.--Barley: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Ending stocks May 31: Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	173.1	454.8	10.5	638.4	6.0	147.6	13.6	217.5	384.7	25.7	410.4	2.5	225.5	228.0
1979/80	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	430.5	3.2	188.9	192.1
1980/81	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	476.5	3.3	146.4	149.7
1982/83 2/	149.7	522.4	10.7	682.8	7.2	145.9	17.4	242.5	413.0	47.2	460.2	6.0	216.6	222.6
1983/84*	222.6	560.0 (± 45)	10.0	792.6 (± 45)	---	180.0 (± 5)	---	269.6 (± 25)	449.6 (± 25)	60.0 (± 15)	509.6 (± 35)			283.0 (± 35)

Year beginning June 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Minneapolis: No. 2 or better, feed	Minneapolis: No. 3 or better, malting	Portland: No. 2	Government support program: National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	7.5	0.8	10.0	9.2	49.2	1.92	1.80	2.38	2.10	1.63	2.25	4/ 97
1979/80	7.8	0.7	8.1	7.5	50.9	2.29	2.16	2.87	2.69	1.71	2.40	5/ 22
1980/81	8.7	---	8.3	7.3	49.6	2.86	2.60	3.64	3.34	1.83	2.55	6/ 31
1981/82	10.2	---	9.7	9.2	52.3	2.45	2.21	3.06	2.87	1.95	2.60	5/ 63
1982/83 2/	---	0.4	9.6	9.1	57.3	2.16	1.76	2.53	2.52	2.08	2.60	7/ 60
1983/84		1.0	10.5	9.9	56.5	2.20-2.40				2.16	2.60	8/ 75

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Excludes support payments. 4/ Deficiency, disaster, and diversion payments. 5/ Deficiency and disaster payments. 6/ Disaster payments. 7/ Deficiency payments. 8/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 5.--Oats: marketing year supply and disappearance, area, and prices, 1978-83

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Ending stocks May 31: Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.3	174.6	176.9
1981/82	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7	0.7	151.3	152.0
1982/83 2/	152.0	617.0	3.9	772.9	41.7	---	43.3	455.8	540.8	3.0	543.8	0.7	228.4	229.1
1983/84*	229.1	519.0 (± 40)	5.0	753.1 (± 40)	---	80.0	---	460.1 (± 35)	540.1 (± 35)	10.0 (± 3)	550.1 (± 35)			203.0 (± 35)

Year beginning June 1	Area: National program	Area: Set-aside and diverted 3/	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	Minneapolis: No. 2 white, heavy	Portland: No. 2 white, heavy	Toledo: No. 2 5/	Government support program: National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	---	---	16.4	11.1	52.3	1.20	1.43	1.79	1.37	1.03	---	---
1979/80	---	---	14.0	9.7	54.4	1.36	1.57	1.87	1.60	1.08	---	---
1980/81	---	---	13.4	8.7	53.0	1.79	2.04	2.42	2.17	1.16	---	---
1981/82	---	---	13.7	9.4	54.1	1.89	2.14	2.36	2.23	1.24	---	---
1982/83 2/	---	0.1	14.2	10.6	58.4	1.45	1.69	2.18	1.55	1.31	1.50	---
1983/84		0.5	20.2	9.1	57.4	1.40-1.55				1.36	1.60	6/ 16

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Not included in the program until 1982. 4/ Excludes support payments. 5/ Prior to June 1981 reported for Chicago. 6/ Deficiency and diversion payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 6.--Feed grains: feed year supply and disappearance, specified periods, 1978-83
(corn, sorghum, oats, barley)

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million metric tons													
1978/79														
Oct.-Dec.	52.7	203.2	0.1	256.0	3.6	1.2	0.1	45.1	50.0	12.9	62.9	3.0	190.1	193.1
Jan.-Mar.	193.1	---	0.1	193.2	3.2	1.2	0.3	39.0	43.7	12.6	56.3	3.7	133.2	136.9
Apr.-May	136.9	---	0.1	137.0	2.4	0.9	0.8	21.6	25.7	10.6	36.3	3.7	97.0	100.7
June-Sept.	100.7	16.0	0.1	116.8	5.2	1.7	0.2	30.4	37.5	23.8	61.3	3.7	51.8	55.5
Mkt. year	52.7	219.2	0.4	272.3	14.4	5.0	1.4	136.1	156.9	59.9	216.8	3.7	51.8	55.5
1979/80														
Oct.-Dec.	55.5	222.2	0.1	277.8	3.5	1.2	0.1	47.6	52.4	19.2	71.6	3.8	202.4	206.2
Jan.-Mar.	206.2	---	0.1	206.3	3.2	1.3	0.3	39.6	44.4	17.8	62.2	3.8	140.3	144.1
Apr.-May	144.1	---	2/	144.1	2.5	1.0	0.8	20.3	24.6	11.6	36.2	6.7	101.2	107.9
June-Sept.	107.9	14.5	0.1	122.5	6.5	1.9	0.2	30.4	39.0	23.1	62.1	7.7	52.7	60.4
Mkt. year	55.5	236.7	0.3	292.5	15.7	5.4	1.4	137.9	160.4	71.7	232.1	7.7	52.7	60.4
1980/81														
Oct.-Dec.	60.4	183.4	0.1	243.9	3.7	1.2	0.1	45.5	50.5	20.5	71.0	7.7	165.2	172.9
Jan.-Mar.	172.9	---	0.1	173.0	3.2	1.3	0.3	32.1	36.9	18.7	55.6	7.6	109.8	117.4
Apr.-May	117.4	---	2/	117.4	2.8	1.0	0.8	20.8	25.4	11.3	36.7	7.6	73.1	80.7
June-Sept.	80.7	17.8	0.1	98.6	7.5	1.8	0.2	24.8	34.3	18.8	53.1	7.1	38.4	45.5
Mkt. year	60.4	201.2	0.3	261.9	17.2	5.3	1.4	123.2	147.1	69.3	216.4	7.1	38.4	45.5
1981/82														
Oct.-Dec.	45.5	230.7	0.1	276.3	4.1	1.1	0.1	47.4	52.7	16.6	69.3	7.4	199.6	207.0
Jan.-Mar.	207.0	---	0.1	207.1	3.5	1.4	0.3	36.6	41.8	14.8	56.6	7.7	142.8	150.5
Apr.-May	150.5	---	0.1	150.6	3.1	1.0	0.9	20.1	25.1	11.2	36.3	7.9	106.4	114.3
June-Sept.	114.3	20.3	0.1	134.7	8.2	1.9	0.2	23.7	34.0	15.8	49.8	8.9	76.0	84.9
Mkt. year	45.5	251.0	0.4	296.9	18.9	5.4	1.5	127.8	153.6	58.4	212.0	8.9	76.0	84.9
1982/83														
Oct.-Dec	84.9	234.7	0.1	319.7	4.7	1.4	0.1	48.1	54.3	14.9	69.2	12.2	238.3	250.5
Jan.-Mar.	250.5	---	0.1	250.6	3.6	1.6	0.2	41.7	47.1	14.8	61.9	13.6	175.1	188.7
Apr.-May	188.7	---	0.1	188.8	3.3	1.4	0.9	24.2	29.8	8.3	38.1	14.0	136.7	150.7
June-Sept.														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 metric tons.

Table 7.--Corn: marketing year supply and disappearance, specified periods, 1978-83

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages 1/	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 2/	Total
	Million bushels													
1978/79														
Oct.-Dec	1,111.4	7,267.9	0.1	8,379.4	132.8	17.1	---	1,456.4	1,606.3	454.0	2,060.3	77.3	6,241.8	6,319.1
Jan.-Mar.	6,319.1	---	0.4	6,319.5	116.9	16.9	3.9	1,255.1	1,392.8	426.3	1,819.1	98.8	4,401.6	4,500.4
Apr.-May	4,500.4	---	0.2	4,500.6	90.3	13.2	11.7	711.0	826.2	387.2	1,213.4	100.6	3,186.6	3,287.2
June-Sept.	3,287.2	---	0.5	3,287.7	191.2	22.8	3.9	900.3	1,118.2	865.6	1,983.8	99.7	1,204.2	1,303.9
Mkt. year	1,111.4	7,267.9	1.2	8,380.5	531.2	70.0	19.5	4,322.8	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80														
Oct.-Dec.	1,303.9	7,938.8	0.3	9,243.0	128.2	16.3	---	1,549.4	1,693.9	662.9	2,356.8	99.7	6,786.5	6,886.2
Jan.-Mar.	6,886.2	---	0.3	6,886.5	116.6	18.4	4.0	1,308.2	1,447.2	582.0	2,029.2	101.2	4,756.1	4,857.3
Apr.-May	4,857.3	---	0.1	4,857.4	93.2	13.9	12.0	682.3	801.4	385.6	1,187.0	213.5	3,456.9	3,670.4
June-Sept.	3,670.4	---	0.4	3,670.8	244.8	23.7	4.0	978.7	1,251.2	802.1	2,053.3	256.3	1,361.2	1,617.5
Mkt. year	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81														
Oct.-Dec.	1,617.5	6,644.8	0.2	8,262.5	136.3	16.6	---	1,523.0	1,675.9	727.8	2,403.7	254.3	5,604.5	5,858.8
Jan.-Mar.	5,858.8	---	0.3	5,859.1	116.3	18.3	4.0	1,100.4	1,239.0	632.9	1,871.9	250.0	3,737.2	3,987.2
Apr.-May	3,987.2	---	0.1	3,987.3	106.7	13.8	12.2	684.7	817.4	395.7	1,213.1	251.6	2,522.6	2,774.2
June-Sept.	2,774.2	---	0.6	2,774.8	282.5	24.6	4.0	830.9	1,142.0	598.8	1,740.8	237.8	796.2	1,034.0
Mkt. year	1,617.5	6,644.8	1.2	8,263.5	641.8	73.3	20.2	4,139.0	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82														
Oct.-Dec.	1,034.0	8,201.6	0.4	9,236.0	153.2	16.8	---	1,552.8	1,722.8	545.5	2,268.3	247.6	6,720.1	6,967.7
Jan.-Mar.	6,967.7	---	0.3	6,968.0	128.4	20.2	3.9	1,194.3	1,346.8	489.4	1,836.2	261.7	4,870.1	5,131.8
Apr.-May	5,131.8	---	0.1	5,131.9	119.4	15.2	12.1	672.1	818.8	409.0	1,227.8	269.7	3,634.4	3,904.1
June-Sept.	3,904.1	---	0.4	3,904.5	308.4	30.5	3.4	753.3	1,095.6	523.0	1,618.6	302.4	1,983.5	2,285.9
Mkt. year	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,172.5	4,984.0	1,966.9	6,950.9	302.4	1,983.5	2,285.9
1982/83														
Oct.-Dec.	2,285.9	8,397.3	0.3	10,683.5	175.2	27.9	---	1,543.9	1,747.0	512.7	2,259.7	429.0	7,994.8	8,423.8
Jan.-Mar.	8,423.8	---	0.2	8,424.0	140.0	30.0	1.3	1,380.4	1,551.7	507.9	2,059.6	483.4	5,881.0	6,364.4
Apr.-May	6,364.4	---	0.1	6,364.5	125.0	30.0	9.1	812.0	976.1	308.6	1,284.7	491.7	4,588.1	5,079.8
June-Sept.														
Mkt. year														

1/ Malt beverage and distilled liquor grain products converted to a corn basis. 2/ Includes quantity under loan and farmer-owned reserve.

Table 8.--Sorghum: marketing year supply and disappearance, specified periods, 1978-83

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 1/	Total
	Million bushels													
1978/79														
Oct.-Dec.	190.5	731.3	---	921.8	1.4	1.1	---	235.7	238.2	46.6	284.8	36.6	600.4	637.0
Jan.-Mar.	637.0	---	---	637.0	1.6	1.0	0.2	148.6	151.4	68.3	219.7	42.4	374.9	417.3
Apr.-May	417.3	---	---	417.3	1.3	0.7	1.1	64.0	67.1	28.0	95.1	42.8	279.4	322.2
June-Sept.	322.2	---	3/	322.2	1.7	1.3	0.5	95.5	99.0	63.7	162.7	43.6	115.9	159.5
Mkt. year	190.5	731.3	3/	921.8	6.0	4.1	1.8	543.8	555.7	206.6	762.3	43.6	115.9	159.5
1979/80														
Oct.-Dec.	159.5	808.9	---	968.4	1.6	1.3	---	243.6	246.5	74.2	320.7	45.3	602.4	647.7
Jan.-Mar.	647.7	---	---	647.7	1.6	1.2	0.2	140.2	143.2	108.5	251.7	45.6	350.4	396.0
Apr.-May	396.0	---	---	396.0	1.4	0.7	1.2	54.5	57.8	60.3	118.1	45.6	232.3	277.9
June-Sept.	277.9	---	3/	277.9	1.4	1.4	0.6	46.1	49.5	81.9	131.4	43.9	102.6	146.5
Mkt. year	159.5	808.9	3/	968.4	6.0	4.6	2.0	484.4	497.0	324.9	821.9	43.9	102.6	146.5
1980/81 2/														
Oct.-Dec.	146.5	579.2	3/	725.7	1.6	1.2	---	192.3	195.1	66.2	261.3	43.7	420.7	464.4
Jan.-Mar.	464.4	---	3/	464.4	1.6	0.9	0.2	63.8	66.5	84.1	150.6	43.5	270.3	313.8
Apr.-May	313.8	---	3/	313.8	0.8	0.7	1.2	84.8	87.5	41.7	129.2	43.8	140.7	184.6
June-Sept.	184.6	---	3/	184.6	1.0	1.5	0.6	-39.7	-36.6	112.6	76.0	38.2	70.4	108.6
Mkt. year	146.5	579.2	3/	725.7	5.0	4.3	2.0	301.2	312.5	304.6	617.1	38.2	70.4	108.6
1981/82														
Oct.-Dec.	108.6	879.2	3/	987.8	1.3	1.3	---	217.9	220.5	77.8	298.3	38.4	651.1	689.5
Jan.-Mar.	689.5	---	3/	689.5	1.3	1.3	0.2	150.5	153.3	74.3	227.6	38.2	423.7	461.9
Apr.-May	461.9	---	3/	461.9	0.5	0.8	1.2	57.8	60.3	21.8	82.1	38.3	341.5	379.8
June-Sept.	379.8	---	3/	379.8	1.2	1.4	0.6	4.8	8.0	75.2	83.2	42.9	253.7	296.6
Mkt. year	108.6	879.2	3/	987.8	4.3	4.8	2.0	431.0	442.1	249.1	691.2	42.9	253.7	296.6
1982/83														
Oct.-Dec	296.6	841.1	3/	1,137.7	1.4	1.0	---	259.2	261.6	67.0	328.6	46.7	762.4	809.1
Jan.-Mar.	809.1	---	3/	809.1	1.2	1.0	0.1	123.8	126.1	62.7	188.8	47.8	572.5	620.3
Apr.-May	620.3	---	---	620.3	0.4	0.8	0.8	74.6	76.6	14.1	90.7	54.0	475.6	529.6
June-Sept.														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve. 2/ Revised. 3/ Less than 50,000 bushels.

Table 9.--Barley: marketing year supply and disappearance, specified periods, 1978-83

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79														
June-Sept.	173.1	454.8	2.7	630.6	2.3	52.5	1.1	83.8	139.7	18.8	158.5	0.8	471.3	472.1
Oct.-Dec.	472.1	---	2.8	474.9	1.4	33.0	1.9	42.7	79.0	4.7	83.7	1.4	389.8	391.2
Jan.-Mar.	391.2	---	3.0	394.2	1.4	35.5	3.3	56.8	97.0	0.8	97.8	2.3	294.1	296.4
Apr.-May	296.4	---	2.0	298.4	0.9	26.6	7.3	34.2	69.0	1.4	70.4	2.5	225.5	228.0
Mkt. year	173.1	454.8	10.5	638.4	6.0	147.6	13.6	217.5	384.7	25.7	410.4	2.5	225.5	228.0
1979/80														
June-Sept.	228.0	382.8	3.7	614.5	2.5	51.9	1.1	87.3	142.8	9.9	152.7	2.9	458.9	461.8
Oct.-Dec.	461.8	---	2.8	464.6	1.7	34.0	2.0	38.9	76.6	22.4	99.0	3.1	362.5	365.6
Jan.-Mar.	365.6	---	3.2	368.8	1.7	37.0	3.4	53.3	95.4	11.1	106.5	3.3	259.0	262.3
Apr.-May	262.3	---	2.1	264.4	1.1	28.0	7.5	24.3	60.9	11.4	72.3	3.2	188.9	192.1
Mkt. year	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	430.5	3.2	188.9	192.1
1980/81														
June-Sept.	192.1	361.0	3.5	556.6	2.5	56.6	1.2	78.9	139.2	24.9	164.1	3.5	389.0	392.5
Oct.-Dec.	392.5	---	2.3	394.8	1.7	33.9	2.2	32.2	70.0	21.4	91.4	3.5	299.9	303.4
Jan.-Mar.	303.4	---	2.7	306.1	1.7	36.0	3.7	38.6	80.0	22.7	102.7	3.4	200.0	203.4
Apr.-May	203.4	---	1.7	205.1	1.1	28.8	6.1	24.1	60.1	7.7	67.8	3.4	133.9	137.3
Mkt. year	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82														
June-Sept.	137.3	479.3	2.4	619.0	2.5	54.5	1.3	76.5	134.8	32.6	167.4	3.3	448.3	451.6
Oct.-Dec.	451.6	---	2.4	454.0	1.7	32.1	2.3	51.8	87.9	33.0	120.9	3.3	329.8	333.1
Jan.-Mar.	333.1	---	2.7	335.8	1.7	37.2	4.0	42.9	85.8	23.1	108.9	3.3	223.6	226.9
Apr.-May	226.9	---	2.1	229.0	1.0	27.1	8.7	31.1	67.9	11.4	79.3	3.3	146.4	149.7
Mkt. year	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	476.5	3.3	146.4	149.7
1982/83														
June-Sept.	149.7	522.4	5.1	677.2	2.5	51.3	1.3	95.3	150.4	25.4	175.8	3.9	497.5	501.4
Oct.-Dec.	501.4	---	1.9	503.3	1.8	32.1	2.8	42.0	78.7	6.5	85.2	4.8	413.3	418.1
Jan.-Mar.	418.1	---	2.2	420.3	1.8	35.5	3.9	69.7	110.9	12.7	123.6	5.8	290.9	296.7
Apr.-May	296.7	---	1.5	298.2	1.1	27.0	9.4	35.5	73.0	2.6	75.6	6.0	216.6	222.6
Mkt. year	149.7	522.4	10.7	682.8	7.2	145.9	17.4	242.5	413.0	47.2	460.2	6.0	216.6	222.6

1/ Includes quantity under loan and farmer-owned reserve.

Table 10.--Oats: marketing year supply and disappearance, specified periods, 1978-83

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79														
June-Sept.	313.1	581.7	0.3	895.1	14.7	---	1.8	224.8	241.3	7.9	249.2	1.5	644.4	645.9
Oct.-Dec.	645.9	---	0.1	646.0	10.3	---	1.8	84.2	96.3	3.4	99.7	2.5	543.8	546.3
Jan.-Mar.	546.3	---	0.2	546.5	10.7	---	7.2	146.3	164.2	0.7	164.9	2.7	378.9	381.6
Apr.-May	381.6	---	0.1	381.7	5.3	---	25.3	70.4	101.0	0.7	101.7	2.7	277.3	280.0
Mkt. year	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80														
June-Sept.	280.0	526.6	0.3	806.9	14.6	---	1.7	221.6	237.9	0.9	238.8	2.6	565.5	568.1
Oct.-Dec.	568.1	---	0.2	568.3	10.4	---	1.7	77.5	89.6	1.9	91.5	2.6	474.2	476.8
Jan.-Mar.	476.8	---	0.2	477.0	10.3	---	6.9	119.7	136.9	0.5	137.4	2.7	336.9	339.6
Apr.-May	339.6	---	0.2	339.8	5.4	---	24.3	72.9	102.6	0.8	103.4	2.7	233.7	236.4
Mkt. year	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81														
June-Sept.	236.4	458.3	0.6	695.3	15.0	---	1.8	190.0	206.8	3.9	210.7	2.7	481.9	484.6
Oct.-Dec.	484.6	---	0.2	484.8	10.0	---	1.8	79.2	91.0	2.8	93.8	2.7	388.3	391.0
Jan.-Mar.	391.0	---	0.3	391.3	10.0	---	7.0	115.6	132.6	2.6	135.2	2.5	253.6	256.1
Apr.-May	256.1	---	0.2	256.3	6.0	---	22.4	47.0	75.4	4.0	79.4	2.3	174.6	176.9
Mkt. year	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.3	174.6	176.9
1981/82														
June-Sept.	176.9	509.2	0.3	686.4	16.0	---	2.0	206.7	224.7	3.2	227.9	1.7	456.8	458.5
Oct.-Dec.	458.5	---	0.2	458.7	10.0	---	2.0	80.3	92.3	1.2	93.5	1.7	363.5	365.2
Jan.-Mar.	365.2	---	0.2	365.4	10.0	---	7.3	110.0	127.3	1.2	128.5	1.7	235.2	236.9
Apr.-May	236.9	---	0.9	237.8	5.2	---	24.1	55.5	84.8	1.0	85.8	0.7	151.3	152.0
Mkt. year	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7	0.7	151.3	152.0
1982/83														
June-Sept.	152.0	617.0	0.8	769.8	16.2	---	2.0	169.0	187.2	1.3	188.5	0.6	580.7	581.3
Oct.-Dec.	581.3	---	0.2	581.5	10.0	---	2.0	94.8	106.8	1.0	107.8	0.7	473.0	473.7
Jan.-Mar.	473.7	---	1.6	475.3	10.7	---	7.6	124.2	142.5	0.3	142.8	0.7	331.8	332.5
Apr.-May	332.5	---	1.3	333.8	4.8	---	31.7	67.8	104.3	0.4	104.7	0.7	228.4	229.1
Mkt. year	152.0	617.0	3.9	772.9	41.7	---	43.3	455.8	540.8	3.0	543.8	0.7	228.4	229.1

1/ Includes quantity under loan and farmer-owned reserve.

Table 11.--Average prices received by farmers, United States, by months, 1979-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
							Dollars per bushel						
Corn													
1979	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	3.01	2.52
1980	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	2.55	3.11
1981	2.45	2.34	2.39	2.54	2.44	2.46	2.55	2.60	2.57	2.50	2.30	2.15	2.50
1982	1.98	2.13	2.26	2.36	2.56	2.71	2.94	3.03	3.04	*3.12			
Sorghum							Dollars per cwt						
1979	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	5.12	4.18
1980	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	4.07	5.25
1981	3.90	3.87	3.95	4.09	4.08	4.00	4.10	4.35	4.17	3.96	3.95	3.80	4.27
1982	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.06	*5.10			

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Average weighted by sales 1/
							Dollars per bushel						
Oats													
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79
1981	1.99	1.84	1.72	1.74	1.78	1.88	1.94	1.97	1.99	2.02	1.99	1.99	1.89
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.47	1.48	1.48	1.54	1.54	1.45
1983	1.50	*1.50											
Barley													
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.86
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	2.50	2.40	2.40	2.42	2.56	2.45
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.03	2.20	2.27	2.16
1983	2.32	*2.12											

Item and year beginning May 1	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales
							Dollars per ton						
Hay (mid-month)													
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.50
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.20	71.00
1981	75.30	66.90	64.00	63.90	62.70	64.80	65.40	65.70	67.90	69.90	69.50	73.30	67.10
1982	77.50	69.60	66.40	65.00	65.90	68.20	68.90	68.10	70.10	74.60	70.50	75.30	68.60
1983	83.30	75.90	72.00										

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes Government payments.
*Preliminary.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 12.--Cash prices at principal markets, 1979-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
						Dollars per bushel							
CORN No. 2 Yellow, St. Louis 1/													
1979	2.59	2.51	2.66	2.50	2.64	2.54	2.53	2.60	2.66	3.01	3.31	3.26	2.73
1980	3.35	3.53	3.59	3.60	3.47	3.42	3.49	3.42	3.33	3.34	3.03	2.61	3.35
1981	2.53	2.59	2.54	2.65	2.61	2.66	2.78	2.78	2.75	2.68	2.42	2.32	2.61
1982	2.32	2.43	2.49	2.52	2.79	2.99	3.24	3.24	*3.27				
CORN No. 2 Yellow, Omaha													
1979	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	3.01	2.49
1980	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	2.51	3.13
1981	2.44	2.39	2.37	2.47	2.45	2.48	2.61	2.65	2.65	2.54	2.23	2.23	2.46
1982	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	*3.11				
SORGHUM No. 2 Yellow, Kansas City						Dollars per cwt							
1979	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	5.61	4.65
1980	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	4.16	5.36
1981	4.14	4.14	4.27	4.44	4.26	4.28	4.45	4.48	4.50	4.38	4.02	4.06	4.29
1982	3.85	4.25	4.37	4.54	4.87	5.08	5.30	5.37	*5.37				

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
OATS No. 2 Heavy, Minneapolis													
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	2.23	2.26	2.16	2.21	2.16	2.14
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	1.67	1.67	1.63	1.73	1.71	1.69
1983	*1.67												
BARLEY No. 2 or Better Feed, Minneapolis													
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	2.20	2.27	2.16	2.16	2.24	2.21
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	1.63	1.72	1.73	2.01	1.95	1.76
1983	*1.96												
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	3.00	3.14	2.99	2.98	3.05	3.06
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	2.38	2.42	2.45	2.68	2.76	2.53
1983	*2.60												

1/ Effective April 1, 1982, reporting of Spot Rail Grain Bids at Chicago by the United States Department of Agriculture, AMS, Livestock and Grain Market News, was discontinued.
* Preliminary.

Source: Grain and Feed Market News, AMS, USDA.

Table 13.--Feed-price ratios for livestock, poultry, and milk, by months, 1979-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
HOG/CORN, U.S. basis 1/													
1979	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	15.3	14.3
1980	15.8	14.7	13.8	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	19.1	14.4
1981	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.2	26.7	28.6	21.0
1982 2/	28.5	24.6	23.7	23.7	21.9	18.6	16.0	15.1	14.4	13.9			
BEEF-STEER/CORN, Omaha 3/													
1979	27.8	28.9	29.1	29.4	29.0	30.0	27.2	26.6	26.6	25.1	24.3	23.1	27.3
1980	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	26.0	21.0
1981	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	27.5	26.3
1982 2/	27.7	25.1	25.2	24.5	23.4	22.7	21.9	21.8	21.2	19.6			
MILK/FEED, U.S. basis 4/													
1979	1.55	1.59	1.54	1.54	1.56	1.56	1.55	1.53	1.50	1.48	1.42	1.40	1.52
1980	1.43	1.40	1.39	1.39	1.39	1.41	1.39	1.35	1.36	1.40	1.43	1.48	1.40
1981	1.53	1.56	1.54	1.55	1.54	1.52	1.50	1.46	1.46	1.47	1.49	1.56	1.52
1982 2/	1.61	1.63	1.60	1.58	1.56	1.55	1.48	1.45	1.43	1.45			
EGG/FEED, U.S. basis 5/													
1979	6.1	6.8	7.3	6.6	5.9	6.3	6.0	5.3	5.5	5.7	6.0	6.2	6.1
1980	5.7	6.0	6.6	5.9	5.7	5.7	6.0	5.2	5.2	5.5	5.8	6.4	5.8
1981	6.5	7.2	6.7	6.6	6.8	7.2	6.6	5.6	5.3	5.7	5.3	6.0	6.3
1982 2/	6.3	6.3	6.0	5.7	5.8	6.2	5.8	6.1	5.9	5.7			
BROILER/FEED, U.S. basis 6/													
1979	2.2	2.6	2.6	2.8	2.6	2.5	2.3	2.5	2.6	3.3	3.0	2.9	2.7
1980	2.8	2.5	2.5	2.6	2.6	2.6	2.3	2.4	2.6	2.6	2.5	2.4	2.5
1981	2.4	2.4	2.3	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.4	2.6	2.5
1982 2/	2.5	2.5	2.4	2.6	2.7	2.4	2.3	2.4	2.6	2.8			
TURKEY/FEED, U.S. basis 7/													
1979	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.5	3.5	3.7	3.7
1980	3.9	3.8	3.5	3.1	3.1	3.2	3.0	3.1	3.3	3.3	3.2	3.1	3.3
1981	2.8	3.1	2.9	2.9	2.9	3.0	3.0	2.9	3.2	3.4	3.4	3.7	3.1
1982 2/	3.9	3.9	3.0	2.8	2.9	2.9	2.7	2.9	2.9	2.8			

1/ Number bushels of corn equal in value to 100 pounds of hog, live weight.
2/ Preliminary.
3/ Based on price of beef-steers 900-1,100 pounds, choice instead of average grade all steers previously published.
4/ Pounds of 16 percent mixed dairy feed equal in value to 1 pound whole milk.
5/ Pounds of laying feed equal in value to 1 dozen eggs.
6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight.
7/ Pounds of turkey grower feed equal in value to 1 pound turkey, live weight.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 14.--Price trends, selected feeds and corn products

Item	Unit	Oct.-Sept. 1981/82 1/	1983 Jan.	Feb.	Mar.	Apr.	May	June
WHOLESALE, MOSTLY BULK 2/								
Soybean meal, 44% solvent, Decatur	$/ton	183	179	177	177	187	186	176
Soybean meal, high protein, Decatur	"	197	192	189	193	203	202	191
Cottonseed meal, 41% solvent, Memphis 3/	"	156	169	166	153	173	168	165
Linseed meal, 34% solvent, Minneapolis	"	152	135	135	136	146	156	151
Peanut meal, Southeast mills	"	182	191	192	193	192	192	183
Meat meal, Ill. prod. pts.	"	208	224	235	231	244	213	201
Fishmeal, 65% protein, East Coast	"	352	375	370	363	363	358	337
Gluten feed, Chicago	"	113	125	118	113	110	112	114
Gluten meal, 60% protein, Chicago	"	242	265	268	251	239	235	213
Brewers' dried grains, Milwaukee	"	97	113	98	96	104	104	102
Distillers' dried grain, Lawrenceburg	"	146	139	137	140	145	147	150
Feather meal, Arkansas Pts. 4/	"	232	240	245	251	259	231	194
Wheat bran, Kansas City	"	82	85	75	81	107	74	77
Wheat middlings, Kansas City	"	82	85	75	81	107	74	77
Rice bran, f.o.b. mills, Arkansas	"	67	80	56	55	57	77	69
Hominy feed, Ill. pts.	"	79	78	81	89	107	110	109
Alfalfa meal, dehy., Kansas City	"	106	120	121	121	131	136	116
Cane molasses, New Orleans	"	51	45	45	45	45	48	49
Molasses beet pulp, Los Angeles	"	115	121	120	123	125	125	123
Animal fat, Ill. prod. pts.	"	14.2	11.6	13.5	13.4	14.1	14.5	13.8
Urea, 42% N., Fort Worth	"	219	210	210	210	210	210	210
Corn, No. 2 white, Kansas City	$/bu.	2.59	3.08	3.10	3.11	3.34	3.54	3.95
PRICES PAID, U.S. BASIS 5/								
Soybean meal, 44%	$/cwt.	13.73	13.10	13.20	13.20	13.60	13.70	13.50
Cottonseed meal, 41%	"	13.77	13.50	13.50	13.60	13.80	14.00	13.90
Wheat bran	"	9.94	9.77	9.76	9.73	9.83	9.87	9.85
Wheat middlings	"	9.52	9.37	9.28	9.29	9.40	9.47	9.49
Broiler grower feed	$/ton	213	202	206	210	215	220	217
Laying feed	"	193	186	188	189	198	202	201
Turkey grower feed	"	231	226	227	230	241	241	246
Chick starter	"	215	207	210	212	219	223	222
Dairy feed, 16%	"	179	175	177	175	182	184	184
Beef cattle concentrate, 32-36% protein	$/cwt.	11.52	11.60	11.90	11.70	12.00	12.20	11.90
Hog concentrate, 38-42% protein	"	14.98	14.80	14.90	14.90	15.50	15.40	15.20
Stock salt	"	6.02	6.09	6.13	6.21	6.21	6.22	6.20
CORN PRODUCTS, WHOLESALE 6/								
Corn meal, New York White	$/cwt.	14.19	13.79	14.18	14.50	15.05	14.95	15.26
Yellow	"	11.77	11.79	12.18	12.50	13.05	12.95	13.26
Grits (brewers'), Chicago	"	9.05	8.59	9.28	9.60	10.16	10.05	10.36
Syrup, Chicago West	c/lb.	14.14	12.75	12.75	9.56	9.56	9.56	12.38
Sugar (dextrose), Chicago West	"	25.00	23.25	23.25	23.75	24.44	24.25	24.25
High-fructose (dried weight in tank cars), Chicago West	"	15.93	11.27	11.27	11.97	14.23	17.61	20.27
Corn starch, f.o.b. Midwest	$/cwt.	10.28	9.31	8.06	10.05	11.03	11.81	12.63

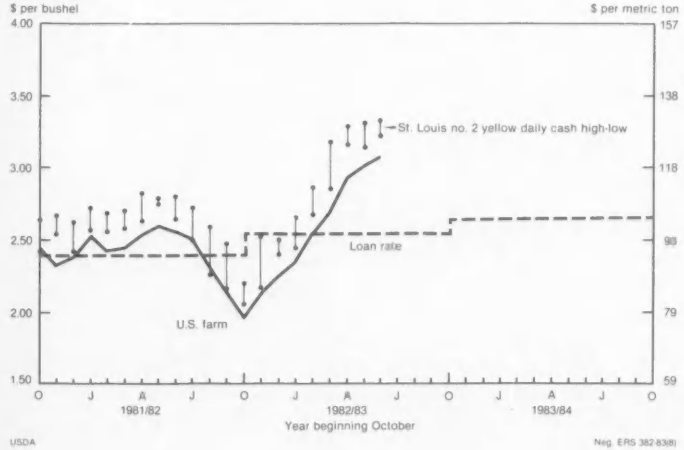
1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Prior to this report expeller process meal at Memphis. 4/ Prior to this report Jackson, Mississippi. 5/ Agricultural Prices, ERS, USDA. 6/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 15.--Feed concentrate balance, number of animal units, and feed per unit, annual, 1976-83

Item	Year beginning October							
	1976	1977	1978	1979	1980	1981	1982 1/	1983 2/
	Million metric tons							
Feed Grains								
October 1 stocks	27.1	43.6	52.7	55.5	60.4	45.5	71.1	105.9
Production								
Corn	159.7	165.2	184.6	201.6	166.1	205.0	209.9	155.0
Sorghum	18.1	19.8	18.6	20.5	14.5	22.0	21.0	16.2
Oats	7.8	10.9	8.4	7.6	6.6	7.4	9.3	7.5
Barley	8.3	9.3	9.9	8.3	7.9	10.4	11.5	12.2
Total	193.9	205.2	221.5	238.0	195.1	244.8	251.7	190.9
Imports	.3	.3	.3	.3	.3	.3	.3	.3
Wheat fed	6.6	5.0	4.9	2.1	1.4	3.8	6.0	7.3
Rye fed	.2	.3	.2	.2	.2	.1	.1	.1
Byproduct feeds fed	31.1	33.8	34.5	38.1	37.9	37.4	37.	37.5
Total supply	259.2	284.9	309.8	334.4	295.3	331.8	366.2	342.0
Concentrates fed								
Corn	91.1	93.8	105.0	115.4	105.1	104.3	114.3	114.3
Sorghum	10.9	12.0	14.2	12.4	7.8	10.8	12.1	12.3
Oats	7.3	7.4	7.7	7.1	6.3	6.5	6.6	6.7
Barley	3.1	4.0	4.5	4.5	3.8	4.4	5.2	5.9
Wheat and rye	6.8	5.3	5.1	2.3	1.5	3.9	6.1	7.4
Oilseed meals	14.4	16.8	18.4	19.5	16.3	18.6	19.2	19.5
Animal protein feeds	2.7	2.8	2.1	2.3	2.5	2.0	2.0	2.0
Grain protein feeds	1.5	1.7	1.8	1.2	1.0	1.6	1.9	1.9
Other byproduct feeds	12.8	12.6	12.4	12.0	12.4	12.0	10.7	11.1
Total	150.6	156.4	171.2	176.7	156.7	164.1	178.1	118.1
	Million units							
Grain-consuming animal units (GCAU's)								
Dairy cattle	12.2	12.1	12.0	12.0	12.2	12.3	12.4	NA
Cattle on feed	19.3	20.6	20.3	18.8	17.8	16.3	18.4	NA
Other cattle	5.2	4.8	4.5	4.6	4.8	4.9	4.8	NA
Hogs	19.4	19.6	21.7	23.8	22.3	20.2	20.3	NA
Poultry	18.3	18.8	20.1	21.1	21.5	21.6	20.6	NA
Other livestock	1.6	1.7	1.7	1.8	2.0	2.0	2.0	NA
Total	76.0	77.6	80.3	82.1	80.6	77.3	78.5	NA
	Tons per unit							
Concentrates fed/GCAU								
Four feed grains	1.57	1.58	1.60	1.72	1.54	1.63	1.76	NA
All concentrates	1.98	2.02	2.13	2.15	1.94	2.12	2.27	NA

1/ Preliminary. 2/ Forecast (7/13/83). NA = Not available.

Corn Prices



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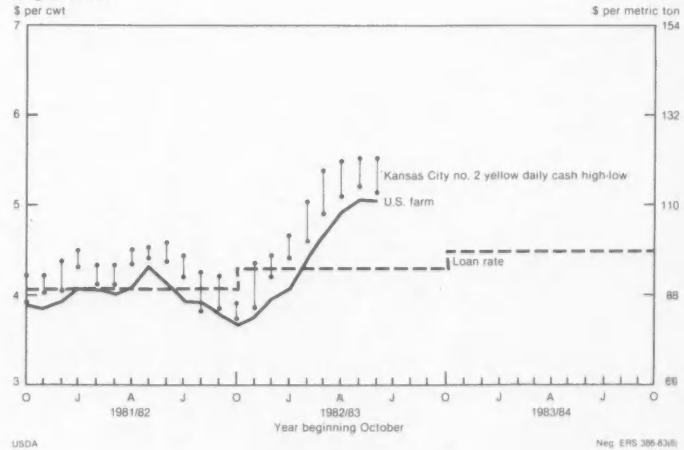
Sorghum Prices



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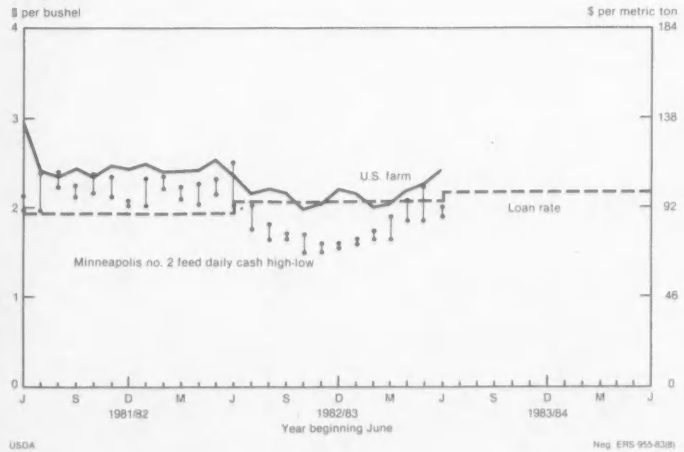
Barley Prices



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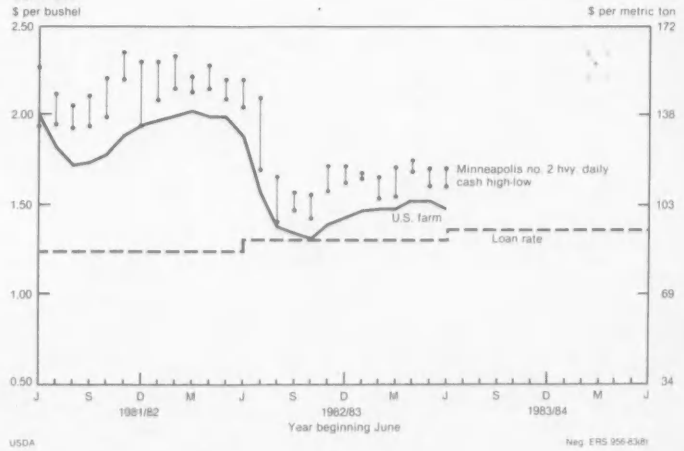
Oat Prices



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